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ABSTRACT

This research examined the relationships of attitudes toward the Army, duty environment, and satisfaction with Army programs/benefits to the career intentions of officers and enlisted personnel. A representative random sample of 4,360 officers and 2,339 enlisted personnel completed a 178-item questionnaire about their attitudes toward these factors. Results showed that similar dimensions of commitment to the Army, satisfaction with programs, duty environment, and career intentions are found within both categories of service members. Career intentions for officers, however, were more related to overall satisfaction with Army human resource programs and with assessment of housing and pay. However, while about 40 percent of the variance in the career intentions of officers was accounted for by commitment, only 10 percent of the variance in the career intentions of enlisted members was accounted for by these analyses. (The report also explores statistical and research methodological issues that should be considered in future investigations.) (Author/KC)

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Technical Report 572

RELATIONSHIPS AMONG ORGANIZATIONAL ATTITUDES, WORK ENVIRONMENT, SATISFACTION WITH HUMAN RESOURCE PROGRAMS AND BENEFITS, AND ARMY CAREER INTENTIONS

Bruce Sterling and John Allen

ARI FIELD UNIT AT FORT BENJAMIN HARRISON, INDIANA

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July 1983

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EDGAR M. JOHNSON
Technical Director

L. NEALE COSBY
Colonel, IN
Commander

Technical review by

Arthur C. F. Gilbert
Guy L. Siebold

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RELATIONSHIPS AMONG ORGANIZATIONAL ATTITUDES, WORK ENVIRONMENT, SATISFACTION WITH HUMAN RESOURCE PROGRAMS AND BENEFITS, AND ARMY CAREER INTENTIONS

Bruce Sterling and John Allen

Submitted by:
Ralph R. Canter, Chief
ARI FIELD UNIT AT FORT BENJAMIN HARRISON, INDIANA

Approved as technically adequate and submitted for publication by
Joyce L. Shields, Director
MANPOWER AND PERSONNEL RESEARCH LABORATORY

U.S. ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES
5001 Eisenhower Avenue, Alexandria, Virginia 22333

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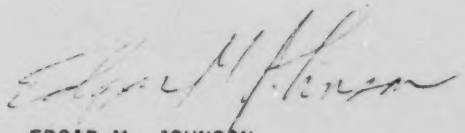
FOREWORD

The Fort Benjamin Harrison Field Unit of the Army Research Institute for the Behavioral and Social Sciences is responsible for providing the Army with information and products to enhance personnel management. Retention of soldiers is a critical personnel concern. This report reviews prior retention research to determine the classes of variables, under control of the Army, related to soldiers' career decisions, the relative strengths of those relationships and potential gaps in the retention literature. It then describes a research effort focused on filling those gaps. The information produced may be useful to Army decision makers in the personnel/retention areas. This research is part of the overall FY 82 ARI Work Program under Domain 1 (Manning and Maintaining the Force), Thrust 5 (Personnel System Management) work unit 1 (Developing Personnel Doctrine).



EDGAR M. JOHNSON
Technical Director

BRIEF

Requirement:

Prior research has found three classes of variables, under control of the Army, that are related to service members' career intentions. They are, in order of the reported strength of that relationship, perceptions of duty environment, attitudes toward the Army (e.g., commitment, patriotism) and satisfaction with Army programs and benefits. However, very few studies have compared the effects of all three classes of variables in concert on career intentions. Second, no research has investigated a data set using officers and enlisted personnel as separate samples and finally none has attempted to codify the Army's numerous programs/benefits on the basis of perceptions of consumers. The present research advances Army understanding of quality of life issues by correcting these three shortcomings.

Procedure:

A random sample of Army officers and enlisted personnel at numerous posts in CONUS, USAREUR and Korea was selected to complete the 1979 Quality of Life survey at a central location on their post during duty time. Completed surveys were obtained from roughly 70 percent of those selected. From this group a random representative sample of 4360 officers and 2339 enlisted personnel was identified by the ARI Fort Harrison Field Unit for secondary data analysis. The survey contained 178 items concerning commitment to the Army, perception of duty environments, satisfaction with Army programs/ benefits, career intentions and other areas not included in the present analyses.

Findings:

Forty percent of the variance in officer career intentions could be accounted for, as opposed to only 10% of the variance in enlisted career intentions. However, different factors seemed to be related to career intentions for the two groups. For officers, commitment (particularly pride in the Army) was highly related to career intent while for enlisted members career intentions were most related to general satisfaction with programs and satisfaction with housing.

Similar dimensions of commitment to the Army existed for both officers and enlisted members. Specifically, both groups perceived commitment in terms of pride in the Army, supervisory support, personal job involvement and sacrifice for mission accomplishment. Also, a large general program satisfaction factor (perhaps representing an overall impression of the extent to which the Army "takes care of its own") was found for both groups. Each group saw specific programs/benefits breaking down into eight categories, seven of which were identical for both groups. These were medical services, troop housing, post transportation services, substance abuse programs, arts and crafts facilities, retirement benefits and child care services. For officers, the eighth factor was dependent youth activities while for enlisted it was family housing. Also, the unidimensional factors of duty environment and career intentions are similar for officers and enlisted personnel.

Utilization of Findings:

These findings could be utilized by Department of Army level decision makers. Assuming that the independent variables influence career intentions rather than vice-versa, it may be useful to develop programs to maintain officer's pride in the Army, such as conducting public relationship efforts to enhance the Army's prestige among the general public. For enlisted members, it is recommended that Army benefits/programs, particularly housing, be considered as priority programs for funding, since they have a relatively small but reliable positive relationship with career intentions.

The findings are also useful to the research community. The eight categories of programs/benefits discovered here should be used in future quality of life research. Also, the recommendations on appropriate sample sizes and redesign of the survey reported in Appendix C should be incorporated in future research in this area.

RELATIONSHIPS AMONG ORGANIZATIONAL ATTITUDES, WORK ENVIRONMENT, SATISFACTION WITH HUMAN RESOURCE PROGRAMS AND BENEFITS, AND ARMY CAREER INTENTIONS

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INTRODUCTION

Maintaining an adequate number of personnel is important to the Army. Therefore, knowledge concerning the types of factors related to career intentions of soldiers is useful to Army decision makers at all levels. The purpose of this research is to supply information concerning the relationships of various classes of variables to the career intentions of soldiers. The first section of this paper outlines the classes of variables related to career intentions or decisions that have been examined in the literature, and draws conclusions concerning which of these classes are most highly related to career intentions. Next, the shortcomings of these research efforts are examined. The remainder of the paper is devoted to describing a research effort which remedies these deficiencies, and the results of that research.

Research concerning career intentions has identified four classes of variables related to career intentions: demographic/background variables; attitudes toward the military (e.g., patriotism, commitment); satisfaction with duty environment; and perceptions of Army benefits. Eaton and Lawton (1980) review studies collectively containing all four categories (although they classify predictors of career intent into only two categories: demographic/personal variables and military experience variables). Their review suggests at least two conclusions to them. First, variables in all four classes (demographic, military attitudes, duty environment, benefits) are found to affect career intentions. Second, although demographic variables may predict career intentions, they are of little practical use to the Army. That is, assuming that one knows that socioeconomic status (SES) is negatively associated with career intentions, one cannot nevertheless only concentrate recruiting efforts among lower SES segments of the population. Thus the principal value of such information is limited to predicting probable personnel retention trends. In light of this, the category of demographic/background variables will not be considered further.

A number of studies concerning the relative impact of two or more of these three classes of variables (military attitudes, duty environment and programs/benefits) suggest that duty environment variables may be the best predictors of career intentions. Owen (1969) studying the Australian Army, found that work role factors (e.g., quality of training) were more related to reenlistment intentions than were remunerative benefits. Holz and Gitter (1974) found that duty environment variables (e.g., being treated like a person) were more predictive of reenlistment intent than was satisfaction with quarters, food, post facilities, etc. Woelfel (1976) discovered that job satisfaction and other duty environment variables (e.g., whether one was working in one's primary military specialty or not) were more related to career intentions than were satisfaction with Army economic benefits (e.g., post exchange, commissary, pay, health care or housing). Goldman and Worstine (1977) showed that beliefs that one's work was interesting was more predictive of reenlistment intentions among enlisted than were opinions on military compensation. Bonette and Worstine (1979) found that satisfaction with Army policies and procedures (a duty environment variable) was most highly related to reenlistment intent for career enlisted members while challenge, interest and importance of current duties (a concept similar to job satisfaction) was the best predictor of first term soldiers' reenlistment intentions. Satisfaction

with pay and allowances was only the second most important factor in determining reenlistment intentions for both groups. Eaton and Lawton (1980) found that boredom and lack of challenge were more highly related to enlisted members' intent to leave the Army than was satisfaction with reenlistment bonuses. Martin (1979), in a non-military setting, found that job satisfaction was more highly related to intent to remain in the organization than was organizational commitment (an attitudinal variable). Similarly Holz and Schreiber (1977) found that job satisfaction was a better predictor of enlisted member's reenlistment intentions than either military related attitudes (submissiveness to authority) or opinions of military benefits/programs (e.g., recreational availability).

Other research presents equivocal findings concerning the importance of duty environment variables in predicting career intentions. Card, Goodstadt, Gross, and Shanner (1975) found that while attitudinal variables (e.g., patriotism) were related to intent to remain in the Reserve Officer Training Corps, job satisfaction was a better predictor of career intent among active duty officers. Hom and Hulin (1980) in a civilian setting, showed duty environment (job satisfaction) and attitudinal variables (organizational commitment) to be related equally to career intentions.

Also, some studies suggest that attitudinal variables, especially organizational commitment, are most highly related to career intentions. Steers (1977) suggested that job characteristics influence commitment, which in turn results in intent to remain in the organization. Similarly Koch and Steers (1978) showed that job characteristics determined job attachment (a concept similar to commitment) which in turn was predictive of turnover rates. Farrell and Rusbult (1981) argued that job commitment is more highly related to turnover rates than is job satisfaction.

Only one study (Foley, 1976) suggests that erosion of military benefits is of paramount importance in determining officers' career intentions. However, examination of the study's results shows that duty environment factors (e.g., superiors' interest in me, duty assignments) and military related attitudes (e.g., opportunity to serve in the national interest) are as important influences to stay as erosion of benefits is an influence to leave the service.

Thus, with the exception of demographic variables, there appears to be three classes of variables influenceable by the Army related to career intentions or decisions: perceptions of duty environment, attitudes toward the Army (e.g., commitment, patriotism) and Army programs/benefits. Further, the class of variables which appear to be most highly and consistently related to career intentions is duty environment, with attitudes toward the organization next and attitudes toward programs/benefits least highly and frequently related to career intentions.

The above studies suffer several limitations. First, only a few (Foley, 1976; Holz & Schreiber, 1977) have contrasted the effects of variables from all three classes (attitudes, duty environment, programs/benefits) on career intentions. Second, none has examined data for officers and enlisted

separately, although it is likely that the processes and factors determining career intentions differ in these groups. Finally, none of these studies attempts to codify the military's myriad programs/benefits by meaningful classes, rather than simply considering a few programs for analysis. The present study remediates these deficiencies.

METHOD

Subjects

Subjects completing the original survey were approximately 5 percent of the Army's enlisted members and 20 percent of the officers from grades 01 to 03 and W01 to W02 thus yielding a total sample in excess of 50,000. Since this amount of data was unwieldy to analyze and, in the case of enlisted, was not based on sampling each post at the same intensity, a random sample of enlisted was selected so that posts were proportionately represented. This sample involved approximately 1% of the Army's total enlisted force. All officers in the sample were retained for analysis. This produced samples of 2339 and 4360 for enlisted and officers respectively.

Instrument

The survey used was the 1979 Assessment of Quality of Life Programs, reproduced at Appendix A. It consisted of 178 total items. The first 15 were demographic items. Items 16 to 38 concerned various attitudes toward the Army. Items 39 to 176 dealt with opinions of various Army programs/entitlements (odd numbers concerned perceived importance of the programs while even numbered ones dealt with perceived satisfaction with programs). The last two items were open-ended questions concerning things people liked or disliked about the Army. Items and scales analyzed in this research are presented at Appendix B.

Procedure

Service members from numerous Army posts in CONUS, USAREUR and Korea were randomly selected from MILPERCEN tapes. A list of selected members was sent to each post. These personnel were then notified to report to a testing site where they completed the survey during duty time. Completed surveys were obtained from about 70 percent of the selected respondents.

RESULTS

Tables 1 and 2 present the means, standard deviations, and item-by-item intercorrelations for variables for the enlisted and officers respectively.

Separate stepwise multiple regressions for officer and enlisted samples were performed, with career intentions serving as dependent variable and the four commitment scales, duty environment scale, general program satisfaction scale and eight specific program satisfaction scales acting as independent variables. Tolerance and independent F-values were set at .001 and .01

Table 1

Intercorrelation Matrix: Enlisted Data

	$\bar{X}$	SD	Career intentions	Pride in the Army	Superior support	Personal job involvement	Self-sacrifice for mission
Career intentions							
Pride in the Army			.014				
Supervisory support			.008	.135			
Personal job involvement			.047	.165	.083		
Self-sacrifice for mission			.015	.237	.074	.190	
Duty environment			.044	.063	-.001	-.007	.060
General program satisfaction			.247	.007	-.009	-.001	.004
Medical services	15.590	4.972	.141	.018	.024	.028	-.018
Troop housing	10.394	3.872	.200	-.007	.014	.032	.018
Arts and crafts	-5.964	1.693	.089	.029	.024	.022	.003
Family housing	7.069	2.588	.195	-.013	.010	.046	-.013
Post transportation	-4.154	1.953	.104	-.025	-.036	.024	-.017
Substance abuse programs	-5.368	1.954	.170	-.001	-.016	-.008	-.006
Child care	-5.131	1.846	.142	.078	.010	.067	.047
Retirement benefits	4.949	1.947	.104	.011	.005	.036	.013

Note. For standardized scales (computed by exact method) mean is approximately zero and standard deviation approximately one.

Table 1 (Continued)

	Duty environment	General program satis.	Medical services	Troop housing	Arts and crafts	Family housing	Post transportation	Sub abuse programs	Child care
Career intentions									
Pride in the Army									
Supervisory support									
Personal job involvement									
Self-sacrifice for mission									
Duty environment									
General program satisfaction	.044								
Medical services	.028	.175							
Troop housing	-.021	.152	.377						
Arts and crafts	.025	.177	.367	.319					
Family housing	.017	.112	.432	.499	.262				
Post transportation	-.035	.178	.340	.336	.266	.338			
Substance abuse programs	.029	.530	.321	.376	.390	.338	.397		
Child care	.008	.195	.429	.529	.471	.445	.427	.405	
Retirement benefits	-.003	.215	.396	.357	-.316	.339	.320	.354	.418

Note. For standardized scales (computed by exact method) mean is approximately zero and standard deviation approximately one.

Table 2

Intercorrelation Matrix: Officer Data

	$\bar{X}$	SD	Career intentions	Pride in the Army	Superior support	Personal job involvement	Self-sacrifice for mission	Duty environment
Career intentions								
Pride in the Army			.597					
Supervisory support			.246	.119				
Personal job involvement			.159	.083	.064			
Self-sacrifice for mission			.211	.172	.042	.259		
Duty environment			.022	.033	-.007	.001	.009	
General program satisfaction			.053	.098	.061	.065	.061	.039
Medical services	15.422	4.725	.124	.158	.168	-.003	-.006	.033
Troop housing	8.490	3.132	.094	.139	.142	-.046	.018	.038
Post transportation	-.903	2.762	-.015	-.020	.010	-.063	-.066	.008
Substance abuse	5.218	1.830	-.110	-.176	-.149	-.011	-.020	-.012
Arts and crafts	5.875	1.598	.079	.097	.106	.055	.052	.047
Retirement benefits	-4.905	1.842	.147	.155	.123	-.003	.041	.030
Child care	-8.018	2.388	.097	.110	.100	.033	.053	.020
DYA	-5.510	1.640	.075	.122	.113	.045	.055	.033

Note. For standardized scales (computed by exact method) mean is approximately zero and standard deviation approximately one.

Table 2 (Continued)

	General program satis.	Medical services	Troop housing	Post transportation	Substance abuse	Arts and crafts	Retirement benefits	Child care
Career intentions								
Pride in the Army								
Supervisory support								
Personal job involvement								
Self-sacrifice for mission								
Duty environment								
General program satisfaction								
Medical services	.194							
Troop housing	.164	.248						
Post transportation	-.036	.044	.139					
Substance abuse	-.222	-.248	-.237	-.038				
Arts and crafts	.827	.281	.256	.042	.278			
Retirement benefits	.179	.351	.273	.035	.229	.248		
Child care	.248	.324	.286	.074	.244	.329	.283	
DYA	.614	.304	.327	.122	.347	.437	.295	.388

Note. For standardized scales (computed by exact method) mean is approximately zero and standard deviation approximately one.

respectively. Results are shown for enlisted and officer samples in Tables 3 and 4, respectively. For officers, the Pearson correlation (from Table 2) reveals that the commitment factor of pride in the Army is much more highly associated with career intentions than is any other individual variable. The multiple regression reveals similar results. While four terms (pride in the Army, supervisory support, sacrifice for mission accomplishment, and personal job commitment, respectively) made statistically significant contributions to total variance accounted for, pride in the Army accounted for about 12 times as much unique variance as the next highest variable. Further all three other variables together accounted for only 5% (of a total of about 40%) additional variance.

For enlisted personnel, the variables with the three highest Pearson correlations with career intentions (Table 1) were general program satisfaction, satisfaction with family housing and satisfaction with troop housing. In the multiple regression these same three variables were the only ones to make statistically significant contributions to the variance accounted for in the dependent variable. These variables accounted for about 6%, 3% and 1% of unique variance, respectively.

There has always been much interest in the influence of monetary benefits on career intentions. Since a monetary benefits factor did not emerge from the programs/benefits data, these items were reexamined to assess which of them concerned monetary benefits. "Monetary benefits" were defined as any direct payments to service members with "no strings attached" (e.g., pay). There appeared to be only three such items. These were satisfaction with pay, reenlistment bonus and retirement pay. However, officer and enlisted data already contained a retirement benefits factor which had been determined to have little relationship to career intent. Also, satisfaction with reenlistment bonuses was not applicable for officers. Thus, for the officer sample the single item pay (scored as described in Appendix B) was added to the regression equation predicting career intent. (The simple Pearson correlation between pay and career intent was .19. This is much smaller than the correlation between pride in the Army and career intent (.60).) When considered along with other predictors of career intent, it did not make a statistically significant contribution to the variance in career intentions.

For enlisted personnel, satisfaction with pay and reenlistment bonuses were added to the regression equation attempting to "predict" career intentions. The simple correlation between pay and career intent is .24 while the correlation between reenlistment bonuses and career intentions is .17. The first correlation compares quite favorable with the simple correlation between general program satisfaction and career intentions (.25). When included along with the other predictors of career intent, satisfaction with pay becomes the second best predictor of career intent, accounting for 4% of the variance, as opposed to 6% for general program satisfaction. Satisfaction with reenlistment bonuses also makes a statistically significant contribution to the variance, accounting for about one-half of one percent additional unique variance.

Table 3

Multiple Regression on Career Intentions: Enlisted Data

Variable	Simple r	Multiple r	Multiple r2	% unique variance accounted for	Stepdown F	P
General program satisfaction	-.247	.247	.0612	.0612	21.85	.01
Family housing	-.195	.300	.0897	.0285	4.86	.01
Troop housing	-.200	.314	.0984	.0087	4.10	.01

Table 4

Multiple Regression on Career Intentions: Officer Data

Variable	Simple r	Multiple r	Multiple r2	% unique variance accounted for	Stepdown F	P
Pride in the Army	-.597	.597	.3566	.3566	451.59	.01
Supervisory support	-.246	.622	.3875	.0312	43.91	.01
Self-sacrifice for mission accomplishment	-.211	.631	.3987	.0112	10.69	.01
Personal job commitment	-.159	.636	.4045	.0058	8.96	.01

Factor analysis of the items concerning attitudes toward the Army (commitment) revealed four similar factors for both officers and enlisted personnel. Specifically, these were pride in the Army, supervisory support, personal job commitment and self sacrifice for mission accomplishment. Detailed information on these factors and how they were determined is reported in Appendix B.

Factor analysis of the items concerning duty environment revealed one factor for both samples. This factor is further described in Appendix B also.

When items concerning Army programs and benefits were factor analyzed, a large general factor emerged for both officer and enlisted samples. After this large general factor was removed, further analysis suggested that officers and enlisted members saw Army programs/benefits as falling into eight categories, seven of which were quite similar for both officer and enlisted samples. These were: medical services, troop housing, post transportation, substance abuse programs, arts and crafts facilities, retirement benefits and child care services. The eighth factor was dependent youth activities for officers and family housing for enlisted personnel. Detailed information on the composition of these factors and how they were determined are given in Appendix B.

DISCUSSION

Results suggest that the factors comprising career intentions, commitment, duty environment, general program satisfaction and seven of eight specific program satisfaction factors are similar for officers and enlisted personnel. This suggests that both groups of military personnel, when thinking of such concepts as commitment and satisfaction with Army programs/benefits, see these concepts as being composed of similar dimensions. This is useful information to people concerned with these programs, since it tells them that both groups "see the world" similarly. This does not mean that officers and enlisted personnel have similar levels of satisfaction on these dimensions, however. In fact survey data on various topics as well the current data suggest that officers generally report higher levels of satisfactions than enlisted members.

The large general satisfaction factor emerging for both groups is of considerable interest. This suggests that when soldiers examine programs/benefits they may focus on particular families of them per se as much as they form an overall impression on the extent to which the Army generally satisfies their needs for services and benefits. It may be important to influence enlisted servicemembers' impressions that in its human resource programs and entitlements the Army concretely shows that "it takes care of its own," since for them this general factor is the one most related to career intentions (assuming that satisfaction with benefits/programs influences career intentions rather than vice versa).

Another finding is that more of the variance in career intentions could be explained for the officers than for the enlisted members. The four commitment variables, which were the only ones to make statistically significant

contributions to the explained variance in the officer sample accounted for 40% of the variance in career intentions. About 35% of the variance was explained by pride in the Army alone. However, for enlisted members, the three variables concerning satisfaction with programs/benefits in general and satisfaction with housing, which were the only ones to make statistically significant contributions, explained only about 10% of the variance in career intentions. This may be because officers are a more homogenous group in terms of education, socioeconomic status, etc., than enlisted personnel, so there are less error variances to contend with.

Further, different factors appear to be related to career intentions for the two groups. For the officers, attitudes toward the Army (commitment) and in particular pride in the Army are highly associated with career intentions, while other factors have less impact. For enlisted personnel, general program satisfaction (possibly the feeling that the Army takes care of its own or not) is most highly associated with positive career intentions, while satisfaction with pay and housing are also associated with career intentions. These findings are in contrast with the previous literature, where duty environment was found to have the strongest relationship to career intentions. Numerous differences, such as types of survey questions asked, could account for these discrepant findings.

If one is willing to assume that the independent variables influence career intentions, rather than vice-versa, these findings suggest that different strategies may be needed to retain officers and enlisted members. For example, in order to retain officers Department of the Army level decision makers may wish to consider developing programs to maintain pride in the Army, such as public relations efforts to enhance the Army's prestige among the general public. An example of this would be portraying the Army in advertising as a defender of the nation, rather than a place to get training so one could then get a really "good" job. However, it is possible that pride in the Army is not influenceable by public relations efforts but is a reflection of the extent that the Army is perceived to be used by Congress and the President as an instrument of legitimate national policy. For enlisted members, it would appear that different initiatives are needed. For example, preventing erosion of medical and retirement benefits might enhance satisfaction with Army programs and benefits in general. Increasing the availability of family housing and quality of troop housing (barracks) could increase satisfaction with family and troop housing, the other two factors slightly but reliably related to enlisted member's career intentions. Of course, all these efforts cost money, but if they do in fact enhance retention, they will to some extent pay for themselves in recruitment and training costs, plus the intangible of increased combat readiness by having a more experienced force.

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APPENDIX A

THE QUALITY OF LIFE SURVEY INSTRUMENT

ASSESSMENT OF

QUALITY OF LIFE

PROGRAMS

PREPARED BY

OFFICE OF

THE DEPUTY CHIEF OF STAFF FOR PERSONNEL

HEADQUARTERS, DEPARTMENT OF THE ARMY

33

Section A

This section contains a variety of questions about you. Your answers to these questions will help us in organizing the information you provide us in Sections B and C of this questionnaire to enable us to invest money and manpower for those items that are most important to you. Please provide your best possible answer to each question by blackening the appropriate response on items 1 through 18 of your answer sheet. Do not write your name and social security number anywhere on the answer sheet or questionnaire.

1. What is your sex?

   A. Male
   B. Female

2. What is your highest level of education?

   A. Non-high school graduate
   B. GED
   C. High school graduate
   D. Some college
   E. Bachelor degree or higher

3. What is your grade?

   A. E1 - E4
   B. E5 - E6
   C. E7 - E9
   D. WO1 - CW4
   E. O1 - O3

4. How long have you been in the Army?

   A. Less than 6 months
   B. At least 6 months, but less than 2 years
   C. At least 2, but less than 6 years
   D. At least 6, but less than 10 years
   E. 10 years or more

5. How long have you been at this post?

   A. Less than 6 months
   B. At least 6 months, but less than 1 year
   C. At least 1 year, but less than 2 years
   D. 2 years or more

6. How many dependents do you have for whom you provide over half of their support (not counting yourself)?

   A. 0
   B. 1
   C. 2
   D. 3
   E. 4 or more

7. How many overseas tours of duty have you had? (Includes Vietnam, Korea, Germany, Alaska, Hawaii.)

A. 0
B. 1
C. 2
D. 3
E. 4 or more

8. What is your marital status?

A. Single, never married
B. Married
C. Legally separated
D. Divorced (annulled), not remarried
E. Widow or widower, not remarried

9. If married, is your family with you?

A. Yes, my spouse is active duty military
B. Yes, my spouse is civilian
C. No, my spouse is active duty military
D. No, my spouse is civilian
E. I am not married

10. What is your racial/ethnic group?

A. Black
B. White
C. A race other than Black or White

11. What type of unit are you in?

A. Combat (Infantry, Armor, Artillery, Air Defense Artillery)
B. Combat Support (Engineer, Military Intelligence, Military Police, Chemical, Aviation, etc.)
C. Combat Service Support (Administration, Aviation Maintenance, Mechanical Maintenance, Medical, Transportation, Adjutant General, Quartermaster, etc.)
D. Other

12. Are you now working in your primary or secondary MOS/Specialty?

A. Yes
B. No

13. What percentage of your time in the Army have you worked in your <u>primary</u> or <u>secondary</u> MOS/Specialty?

A. 0 - 20%
B. 21 - 40%
C. 41 - 60%
D. 61 - 80%
E. 81 - 100%

14. Is this your first enlistment or obligated tour of service?

A. Yes
B. No

15. Where do you live?

A. On post in housing for unaccompanied personnel (BEQ, BOQ, barracks)
B. On post in government family housing
C. Off post in government-leased familiy housing
D. Off post (other)

16. Which of the following best describes your career intentions at the present time?

A. I plan to stay in the Army until retirement
B. I plan to stay in the Army beyond my present obligation but am undecided about staying until retirement
C. I am undecided whether or not I will stay in the Army
D. I will probably leave the Army upon completion of my present obligation
E. I will definitely leave the Army upon completion of my present obligation

17. If I could get out of the Army right now . . .

A. I definitely would not
B. I probably would not
C. I am undecided
D. I probably would
E. I definitely would

18. If you are thinking about leaving the Army, what is the most important reason why you would leave?

A. My duty environment (job satisfaction, working conditions, supervisor, duties)
B. Living environment (BOQ, BEQ, barracks, family housing)
C. Post services (medical, dental, PX, commissary)
D. Compensation (pay, retirement, etc.)
E. I am <u>not</u> thinking about leaving the Army at this time

Section B

On the following items, please indicate your agreement or disagreement with each statement by marking the response closest to your own feelings. The possible responses are shown below. Please mark your responses on the answer sheet.

ITEM	RESPONSES
	A. Strongly disagree B. Disagree C. No opinion D. Agree E. Strongly agree
19. I would try to get out of being deployed to a combat zone if ordered to do so.	(19) A B C D E
20. I don't care how well I do in the Army.	(20) A B C D E
21. I am willing to do more than what is expected of me to get the job done.	(21) A B C D E
22. I care about what happens to the Army.	(22) A B C D E
23. It annoys me to work after normal duty hours.	(23) A B C D E
24. I "talk up" the Army to my friends as a good organization to belong to.	(24) A B C D E
25. Accomplishing the mission is more important to me than my personal comfort.	(25) A B C D E
26. I would rather work in the Army than anywhere else.	(26) A B C D E
27. If a relative or friend of mine were thinking about joining the Army, I would try to discourage him or her.	(27) A B C D E
28. I take a lot of pride in doing my job well.	(28) A B C D E
29. I am glad that I decided to join the Army.	(29) A B C D E
30. I feel little loyalty toward the Army.	(30) A B C D E
31. I am proud to tell others I am in the Army.	(31) A B C D E
32. I am satisfied with my job in the Army.	(32) A B C D E

ITEM	RESPONSES
	A. Strongly disagree B. Disagree C. No opinion D. Agree E. Strongly agree
33. I have enough freedom to do my job the way I think it should be done.	(33) A B C D E
34. My job in the Army is very important.	(34) A B C D E
35. My superiors praise me when I do a good job.	(35) A B C D E
36. My superiors respect me as a person.	(36) A B C D E
Please answer questons 37 and 38 only if you are married:	
37. My spouse is satisfied with the military environment.	(37) A B C D E
38. My spouse's attitude toward the Army will influence my decision to stay in the military.	(38) A B C D E

Section C

Each year, the Army spends a lot of money on programs and services designed to improve the conditions under which you and your family live and work. It is important that the Army spend this money on things that you really need. In this section, we need to find out what programs and services you feel are important in terms of influencing your decision to stay in the Army and how satisfied you are with these programs and services. If married, please consider your spouse's feelings when answering the questions below.

Please read each item carefully. Respond to each item in terms of where you are now stationed in the Army. IT IS POSSIBLE, THAT SOME OF THESE PROGRAMS OR SERVICES MAY NOT EXIST WHERE YOU ARE STATIONED. EVEN IF THEY DON'T EXIST, IT IS STILL IMPORTANT THAT YOU RATE EACH ITEM IN TERMS OF ITS IMPORTANCE TO YOU.

IT IS ALSO POSSIBLE THAT SOME OF THE ITEMS IN THIS SECTION MAY NOT APPLY TO YOU AT THIS TIME BECAUSE THEY CONCERN A SERVICE DEPENDENTS RECEIVE. EVEN IF YOU HAVE NO DEPENDENTS, PLEASE ANSWER THE QUESTIONS IN TERMS OF HOW IMPORTANT THIS ITEM WOULD BE IF YOU HAD DEPENDENTS.

Answer the following two questions about each item using the scale that's shown for each question.

FIRST QUESTION: HOW IMPORTANT is this program or service to you and your family in terms of influencing your decision to stay in the Army?

A. No opinion/Don't know about this item
B. Definitely not important
C. Probably not important
D. Probably important
E. Definitely important

NOTE: Apply the scale of importance to the "ODD NUMBERED" items on your answer sheet and blacken the numbered circle that most accurately reflects your feelings.

SECOND QUESTON: HOW SATISFIED are you and your spouse (if you have one) with the program you use or service you receive?

A. Does not apply
B. Highly dissatisfied
C. Somewhat dissatisfied
D. Somewhat satisfied
E. Highly satisfied

NOTE: Apply the scale of satisfaction to the "EVEN NUMBERED" items on your answer sheet and blacken the numbered circle that most accurately reflects your feelings.

RESPONSES

ITEM	HOW IMPORTANT is this in terms of influencing me to stay in the Army? (ODD NUMBERED ITEMS) A. No opinion/Don't know about this item B. Definitely not important C. Probably not important D. Probably important E. Definitely important	HOW SATISFIED am I with the services I use? (EVEN NUMBERED ITEMS) A. Does not apply B. Highly dissatisfied C. Somewhat dissatisfied D. Somewhat satisfied E. Highly satisfied
PAY/ALLOWANCES/ENTITLEMENTS		
The amount of money I'm paid each month.	(39) A B C D E	(40) A B C D E
Being allowed to take my dependents overseas at no cost to me.	(41) A B C D E	(42) A B C D E
The reenlistment bonus I'm eligible for (enlisted only).	(43) A B C D E	(44) A B C D E
HEALTH CARE		
On-post medical facilities (hospital, clinics).	(45) A B C D E	(46) A B C D E
On-post medical services I receive.	(47) A B C D E	(48) A B C D E
On-post dental facilities (clinics).	(49) A B C D E	(50) A B C D E
On-post dental services I receive.	(51) A B C D E	(52) A B C D E
The on-post medical services my dependents receive.	(53) A B C D E	(54) A B C D E
The on-post dental services my dependents receive.	(55) A B C D E	(56) A B C D E

RESPONSES

ITEM	HOW IMPORTANT is this in terms of influencing me to stay in the Army? (ODD NUMBERED ITEMS)	HOW SATISFIED am I with the services I use? (EVEN NUMBERED ITEMS)
	A. No opinion/Don't know about this item B. Definitely not important C. Probably not important D. Probably important E. Definitely important	A. Does not apply B. Highly dissatisfied C. Somewhat dissatisfied D. Somewhat satisfied E. Highly satisfied
HEALTH CARE		
The amount of money my dependents and I receive to help pay for the cost of health care under CHAMPUS.	(57) A B C D E	(58) A B C D E
FAMILY HOUSING		
The services provided by the Housing Referral Office.	(59) A B C D E	(60) A B C D E
On-post government housing provided me.	(61) A B C D E	(62) A B C D E
Maintenance/condition of on-post government housing.	(63) A B C D E	(64) A B C D E
Off-post leased housing.	(65) A B C D E	(66) A B C D E
Quartermaster furniture for government or leased housing.	(67) A B C D E	(68) A B C D E
TROOP HOUSING		
On-post quarters for unaccompanied personnel (BOQ, BEQ, barracks).	(69) A B C D E	(70) A B C D E

RESPONSES

ITEM	HOW IMPORTANT is this in terms of influencing me to stay in the Army? (ODD NUMBERED ITEMS)	HOW SATISFIED am I with the services I use? (EVEN NUMBERED ITEMS)
	A. No opinion/Don't know about this item B. Definitely not important C. Probably not important D. Probably important E. Definitely important	A. Does not apply B. Highly dissatisfied C. Somewhat dissatisfied D. Somewhat satisfied E. Highly satisfied
TROOP HOUSING		
Maintenance/condition of my BOQ/BEQ/ barracks.	(71) A B C D E	(72) A B C D E
The privacy I have in my barracks.	(73) A B C D E	(74) A B C D E
Physical security for my belongings.	(75) A B C D E	(76) A B C D E
Furniture in the BOQs, BEQs, barracks.	(77) A B C D E	(78) A B C D E
POST SERVICES/COMMUNITY SUPPORT ACTIVITIES		
On-post personal financial planning services.	(79) A B C D E	(80) A B C D E
Services I receive from Army Community Services (ACS).	(81) A B C D E	(82) A B C D E
Hours of operation for the child care center on-post.	(83) A B C D E	(84) A B C D E
The fees I pay for use of the child care center on-post.	(85) A B C D E	(86) A B C D E
The on-post child care center (day care nursery).	(87) A B C D E	(88) A B C D E

RESPONSES

ITEM	HOW IMPORTANT is this in terms of influencing me to stay in the Army? (ODD NUMBERED ITEMS)	HOW SATISFIED am I with the services I use? (EVEN NUMBERED ITEMS)
	A. No opinion/Don't know about this item B. Definitely not important C. Probably not important D. Probably important E. Definitely important	A. Does not apply B. Highly dissatisfied C. Somewhat dissatisfied D. Somewhat satisfied E. Highly satisfied
TROOP HOUSING		
On-post services for handicapped dependents.	(89) A B C D E	(90) A B C D E
POST SERVICES/COMMUNITY SUPPORT ACTIVITIES		
The on-post library(s).	(91) A B C D E	(92) A B C D E
The on-post gymnasiums/physical fitness centers.	(93) A B C D E	(94) A B C D E
On-post Department of Defense dependent education for children.	(95) A B C D E	(96) A B C D E
The on-post arts and crafts shop facilities (auto craft shops, photo, ceramic, woodworking, etc.).	(97) A B C D E	(98) A B C D E
The on-post arts and crafts services (auto craft shops, photo, ceramic, woodworking, etc.).	(99) A B C D E	(100) A B C D E
The on-post bowling alleys.	(101) A B C D E	(102) A B C D E

RESPONSES

ITEM	HOW IMPORTANT is this in terms of influencing me to stay in the Army? (ODD NUMBERED ITEMS)	HOW SATISFIED am I with the services I use? (EVEN NUMBERED ITEMS)
	A. No opinion/Don't know about this item B. Definitely not important C. Probably not important D. Probably important E. Definitely important	A. Does not apply B. Highly dissatisfied C. Somewhat dissatisfied D. Somewhat satisfied E. Highly satisfied
POST SERVICES/COMMUNITY SUPPORT ACTIVITIES		
The outdoor military recreation facilities (swimming pools, tennis courts, football, and ball fields, etc.).	(103) A B C D E	(104) A B C D E
Club services (NCO, Officer, junior enlisted).	(105) A B C D E	(106) A B C D E
Equipment for dependent youth activities (balls, bats, football gear, uniforms, etc.).	(107) A B C D E	(108) A B C D E
Facilities for dependent youth activities (DYA) (DYA center, ball fields, swimming pools, etc.).	(109) A B C D E	(110) A B C D E
On and off post military transportation services.	(111) A B C D E	(112) A B C D E
Transportation for my dependents to take them to and from military facilities (PX, commissary, etc.).	(113) A B C D E	(114) A B C D E

RESPONSES

ITEM	HOW IMPORTANT is this in terms of influencing me to stay in the Army? (ODD NUMBERED ITEMS)	HOW SATISFIED am I with the services I use? (EVEN NUMBERED ITEMS)
	A. No opinion/Don't know about this item B. Definitely not important C. Probably not important D. Probably important E. Definitely important	A. Does not apply B. Highly dissatisfied C. Somewhat dissatisfied D. Somewhat satisfied E. Highly satisfied
POST SERVICES/COMMUNITY SUPPORT ACTIVITIES		
Commissary services.	(115) A B C D E	(116) A B C D E
PX services.	(117) A B C D E	(118) A B C D E
On-post legal services.	(119) A B C D E	(120) A B C D E
On-post banking services.	(121) A B C D E	(122) A B C D E
On-post Credit Union services.	(123) A B C D E	(124) A B C D E
On-post postal services (including APO overseas.	(125) A B C D E	(126) A B C D E
On-post religious programs.	(127) A B C D E	(128) A B C D E
On-post alcohol abuse program.	(129) A B C D E	(130) A B C D E
On-post drug abuse program.	(131) A B C D E	(132) A B C D E
On-post child abuse service.	(133) A B C D E	(134) A B C D E
On-post equal opportunity.	(135) A B C D E	(136) A B C D E

RESPONSES

ITEM	HOW IMPORTANT is this in terms of influencing me to stay in the Army? (ODD NUMBERED ITEMS) A. No opinion/Don't know about this item B. Definitely not important C. Probably not important D. Probably important E. Definitely important	HOW SATISFIED am I with the services I use? (EVEN NUMBERED ITEMS) A. Does not apply B. Highly dissatisfied C. Somewhat dissatisfied D. Somewhat satisfied E. Highly satisfied
EDUCATION		
Tuition assistance for high school and college courses.	(137) A B C D E	(138) A B C D E
Education center services (counselling, course offerings, etc.).	(139) A B C D E	(140) A B C D E
The Veterans' Educational Assistance Program (VEAP) (you get $2 for every $1 you save).	(141) A B C D E	(142) A B C D E
The off-duty high school completion program.	(143) A B C D E	(144) A B C D E
The Basic Skills Education Program (BSEP II).	(145) A B C D E	(146) A B C D E
Fully funded education benefits (GI Bill).	(147) A B C D E	(148) A B C D E
DUTY ENVIRONMENT		
MOS/Specialty training to help me do my job.	(149) A B C D E	(150) A B C D E
Equipment to help me do my job.	(151) A B C D E	(152) A B C D E

RESPONSES

ITEM	HOW IMPORTANT is this in terms of influencing me to stay in the Army? (ODD NUMBERED ITEMS) A. No opinion/Don't know about this item B. Definitely not important C. Probably not important D. Probably important E. Definitely important	HOW SATISFIED am I with the services I use? (EVEN NUMBERED ITEMS) A. Does not apply B. Highly dissatisfied C. Somewhat dissatisfied D. Somewhat satisfied E. Highly satisfied
DUTY ENVIRONMENT		
My working conditions.	(153) A B C D E	(154) A B C D E
Unit field training I participate in.	(155) A B C D E	(156) A B C D E
Safety in my work environment.	(157) A B C D E	(158) A B C D E
The assistance provided by my unit's personnel administration center (PAC).	(159) A B C D E	(160) A B C D E
The assistance provided by my unit's supply administration center (SAC).	(161) A B C D E	(162) A B C D E
Military Finance Services.	(163) A B C D E	(164) A B C D E
The civilian MP program.	(165) A B C D E	(166) A B C D E
The use of civilians instead of soldiers in details/duties such as grass cutting, maintenance of grounds and buildings, and security guard.	(167) A B C D E	(168) A B C D E

RESPONSES

ITEM	HOW IMPORTANT is this in terms of influencing me to stay in the Army? (ODD NUMBERED ITEMS) A. No opinion/Don't know about this item B. Definitely not important C. Probably not important D. Probably important E. Definitely important	HOW SATISFIED am I with the services I use? (EVEN NUMBERED ITEMS) A. Does not apply B. Highly dissatisfied C. Somewhat dissatisfied D. Somewhat satisfied E. Highly satisfied
DUTY ENVIRONMENT		
The leadership/supervision I receive.	(169) A B C D E	(170) A B C D E
My job satisfaction.	(171) A B C D E	(172) A B C D E
RETIREMENT BENEFITS		
Retirement pay.	(173) A B C D E	(174) A B C D E
Retirement benefits other than pay (medical services, PX, commissary).	(175) A B C D E	(176) A B C D E

Section D

The questions in this section are designed to give you the chance to tell us what you think about items that may or may not have been covered adequately in Sections A-C of this questionnaire. Please write your answers to these questions on the answer sheet provided with this questionnaire.

QUESTIONS

1. What are the three things I like best about the Army?

2. What are the three things I like least about the Army?

APPENDIX B

DERIVATION OF THE VARIABLES

MILITARY RELATED ATTITUDES

The items used to measure military related attitudes in this research were items 19 to 36 (see Appendix A). Items 19, 20, 23, 27 and 30 were reverse-scored (e.g., A=5, B=4, etc.) so that the higher the score, the more positive the attitude toward the Army. Separate principal components factor analyses for officer and enlisted samples on these commitment items revealed that the eigenvalues dropped below 1.00 after four factors for both groups. Thus four factors were retained for varimax rotation. The four factor rotated solutions for enlisted and officer commitment (attitudinal) data, plus the total item variance accounted for by each factor, are presented in Tables 5 and 6, respectively. Examination of items loading greater than .40 on a factor suggests that both officer and enlisted commitment data contain four similar factors. These are pride in the Army (e.g., "I talk up the Army to friends as a great organization to belong to"), supervisory support (e.g., "My superiors praise me when I do a good job"), personal involvement in the job (e.g., "I take a lot of pride in doing my job well"), and self sacrifice for mission accomplishment (e.g., "I would try to get out of being deployed to a combat zone if ordered to"; reverse-scored).

In addition to the above (subjective) comparison of officer and enlisted commitment factors, an empirical comparison was also made. A "coefficient of congruence" was used to compare the factor solutions, since the same variables were used in two independent samples (Harmon, 1967). The coefficient of congruence is similar to a Pearson r in that it can range from +1.00 to -1.00 (i.e., a perfect positive or inverse relationship). A coefficient of congruence of +.90 or more is generally considered sufficient to establish good factor congruity (Mulaik, 1972, p. 355). Coefficients of congruence between commitment factors for officers and enlisted are presented in Table 7. Examination of coefficients on the diagonal reveals that the factors possess convergent validity; that is, officer and enlisted factors with the same name are quite highly related empirically. Inspection of off-diagonal coefficients suggests that these factors also have discriminant validity; that is officer and enlisted commitment factors with different names are less highly related than officer and enlisted factors with the same name.

Duty Environment

This concept was measured by the five even-numbered items 150 to 158 (see Appendix A). An "A" response (does not apply) was scored as missing while responses "B" to "E" (highly dissatisfied to highly satisfied) were scored one to four, respectively.

Separate principal component factor analyses of the duty environment items for both officers and enlisted samples revealed only one valid factor for each sample. Rotation was thus unneeded. Factor loadings of the duty environment items for both officer and enlisted samples, as well as percentage of total item variance accounted for by these factors is shown in Table 8. The coefficient of congruence between these two factors is .999.

TABLE 5

COMMITMENT VARIMAX FACTOR LOADINGS: ENLISTED

		Pride in the Army	Supervisory Support	Commitment to job	S.S. for mission accomplishment
V19	Willingness to deploy	.137	.021	.149	.475
V20	Attitude toward performance in the Army	.071	.135	.366	.296
V21	Willing to do more than expected	.126	.070	.639	.169
V22	Care what happens to Army	.207	.063	.553	.191
V23	Annoyance at working after hours	.193	.131	.049	.476
V24	"Talk up" the Army to friends	.679	.212	.206	.196
V25	Importance of "accomplishing the mission"	.298	.152	.328	.170
V26	Rather work in Army than anywhere	.571	.204	.084	.221
V27	Discourage relative from joining Army	.494	.150	.130	.246
V28	Pride in doing job	.128	.159	.576	.087
V29	Glad I joined Army	.548	.252	.356	.225
V30	Feel little loyalty to Army	.121	.042	.184	.371
V31	Pride in the Army displayed to others	.535	.248	.371	.150
V32	Satisfaction with Army job	.316	.519	.157	.041
V33	Freedom to do job the way I feel	.196	.554	.064	.014
V34	Army job is important	.243	.320	.363	.040
V35	Superiors praise me for good job	.110	.678	.092	.147
V36	Superiors respect me as person	.128	.727	.190	.165
	% of total item variance accounted for	11.6%	11.1%	10.5%	6.3%

TABLE 6

COMMITMENT VARIMAX FACTOR LOADINGS: OFFICERS

		Pride in the Army	Supervisory Support	Commitment to job	Self sacrifice for mission accomplishment
V19	Willingness to deploy	.167	.043	.200	.494
V20	Attitude toward performance in the Army	.058	.100	.281	.269
V21	Willing to do more than expected	.068	.071	.689	.130
V22	Care what happens to Army	.150	.067	.554	.150
V23	Annoyance at working after hours	.241	.094	.160	.254
V24	"Talk up" the Army to friends	.691	.152	.090	.165
V25	Importance of "accomplishing the mission"	.273	.076	.329	.333
V26	Rather work in Army than anywhere	.620	.100	.060	.153
V27	Discourage relative from joining Army	.562	.155	.078	.219
V28	Pride in doing job	.120	.128	.524	.186
V29	Glad I joined Army	.573	.222	.270	.270
V30	Feel little loyalty to Army	.238	.020	.190	.293
V31	Pride in the Army displayed to others	.569	.159	.255	.264
V32	Satisfaction with Army job	.543	.418	.145	-.107
V33	Freedom to do job the way I feel	.312	.538	.070	-.098
V34	Army job is important	.330	.290	.298	.023
V35	Superiors praise me for good job	.134	.677	.082	.145
V36	Superiors respect me as person	.125	.736	.158	.222
	% of total item variance accounted for	14.6%	9.6%	9.2%	5.5%

TABLE 7

Coefficients of Congruence

between Commitment Factors

for Enlisted and Officer Samples

	ENLISTED			
OFFICERS	Pride in the Army	Supervisory Support	Personal Job Commitment	Self Sacrifice for mission accomplishment
Pride in the Army	.984	.660	.598	.664
Supervisory Support	.535	.990	.464	.417
Personal Job Commitment	.565	.464	.982	.620
Self-sacrifice for mission accomplishment	.456	.296	.502	.941

Table 8

Duty Environment Factor Loadings

Officers

V150	MOS/specialty training	.588
V152	Equipment for job	.700
V154	Working conditions	.718
V156	Unit field training	.581
V158	Work environment safety	.496

% of total item variance accounted for 39%

Enlisted

V150	MOS/specialty training	.664
V152	Equipment for job	.729
V154	Working conditions	.736
V156	Unit field training	.605
V158	Work environment safety	.566

% of total item variance accounted for 44%

Program Satisfaction

Satisfaction with Army benefits/programs was measured by the evennumbered items 40 to 148, 160 to 168, plus 174 and 176 (see Appendix A). Scoring of responses was identical to that described previously in the duty environment section.

Separate principal component factor analyses were performed with officer and enlisted samples on items concerning satisfaction with various Army programs and benefits. Results showed a very large first factor for both officer and enlisted data. The eigenvalues for the first factor in both groups were six to seven times as large as those of the next largest factor and about twice as large as all the other factors combined. Loadings and percentage of total item variance for the first factor (called general program satisfaction) for enlisted and officer samples are reported in Tables 9 and 10, respectively. The coefficient of congruence for this factor in the two samples is .998.

Since this general factor was so large, it was decided to remove the general variance it accounted for prior to deriving specific program/entitlement factors. Thus, the first factor of the principal components solution was removed and factor loadings on the other (eight) factors were retained for varimax rotation. The eight varimax factors made intuitive sense for both officer and enlisted samples. Item loadings on these factors, and percentage of total item variance accounted for by these factors, for the enlisted and officers samples are presented in Tables 11 and 12 respectively. Inspection of underlined loadings (corresponding to items which seem to best define the factor) reveals seven factors which are similar for both officer and enlisted samples. These factors are medical services, troop housing, post transportation services, substance abuse programs, arts and crafts facilities, retirement benefits and child care services. The eighth factor was dependent youth activities for officers and family housing for enlisted personnel.

Coefficients of congruence between the item loadings for these factors for the officer and enlisted samples are reported in Table 13. Examination of the coefficients on the diagonals show that they are always the highest (in absolute value) of any in the column, indicating that officer and enlisted factors with the same name are more highly related than officer and enlisted factors with different names. However, only the coefficient for medical services is above .90, although the coefficients for six of the seven factors (all but post transportation services) with the same name in both samples were above +.70.

The last factor listed for both samples does not match. However there seems to be a weak correspondence between the dependent youth activities factor for officers and the arts and crafts factor for enlisted personnel. Also, the family housing factor for enlisted personnel has some relation to the officers' troops housing factor.

Career Intentions

Service members' career intentions were measured by items 16 to 18 (see Appendix A). For items 16 and 17, responses "A" to "E" were scored as five to one respectively. For item 18, reponses "A" to "D" were scored as zero while "E" was scored as one.

Table 9

GENERAL PROGRAM SATISFACTION FACTOR LOADINGS: ENLISTED

V40	Pay satisfaction	.385
V42	Like ability to take dependents overseas free	.412
V44	Reenlistment bonus (enlistment only)	.354
V46	Medical facilities	.509
V48	Medical services I receive	.524
V50	Dental facilities	.512
V52	Dental services I receive	.530
V54	Dependent's medical services	.540
V56	Dependent's dental services	.510
V58	CHAMPUS money received for health care	.493
V60	Housing Referral Office services	.517
V62	Government housing provided	.519
V64	Condition of government housing provided	.516
V66	Off-post leased housing	.494
V68	Quartermaster furniture	.572
V70	Unaccompanied personnel on-post quarters	.489
V72	Maintenance of BOQ/BEQ, barracks	.499
V74	Privacy in barracks	.466
V76	Physical security for belongings	.489
V78	Furniture in BOQ/BEQ, barracks	.516
V80	Financial planning services on-post	.591
V82	Army Community Services	.588
V84	Child care center hours	.637
V86	Child care center fees	.618

Table 9

(CONTINUED)

V88	Child care center	.693
V90	Services for handicapped dependents	.736
V92	Library (ies)	.529
V94	Physical fitness centers	.571
V96	Department of Defense dependent education	.683
V98	Arts and crafts facilities	.601
V100	Arts and crafts services	.608
V102	Bowling alleys	.539
V104	Outdoor recreation facilities	.585
V106	Club services	.532
V108	Dependent youth activities equipment	.660
V110	Dependent youth activities facilities	.616
V112	Military transportation services	.531
V114	Dependent's transportation to/from military facilities	.511
V116	Commissary services	.600
V118	PX services	.585
V120	Legal services	.546
V122	Banking services	.548
V124	Credit Union services	.493
V126	Postal services	.498
V128	Religious programs	.500
V130	Alcohol abuse services	.589
V132	Drug abuse program	.631

Table 9

(CONTINUED)

V134	Child abuse services	.686
V136	Equal opportunity	.576
V138	Course tuition assistance	.581
V140	Education center services	.584
V142	Veterans Educational Assistance Program	.578
V144	High school completion program	.612
V146	Basic skills education program	.620
V148	GI Bill	.502
V160	Personnel administration center services	.501
V162	Supply administration center assistance	.516
V164	Military Finance Services	.549
V166	Civilian KP program	.362
V168	Use of civilians instead of soldiers	.336
V174	Retirement pay	.527
V176	Other retirement benefits	.522
% total item variance accounted for		30.2%

Table 10

GENERAL PROGRAM SATISFACTION FACTORS LOADINGS: OFFICERS

V40	Pay satisfaction	.340
V42	Like ability to take dependents overseas free	.361
V44	Reenlistment bonus (enlistment only)	.336
V46	Medical facilities	.494
V48	Medical services I receive	.504
V50	Dental facilities	.477
V52	Dental services I receive	.479
V54	Dependent's medical services	.514
V56	Dependent's dental services	.441
V58	CHAMPUS money received for health care	.452
V60	Housing referral office services	.480
V62	Government housing provided	.492
V64	Condition of government housing provided	.530
V66	Off-post leased housing	.496
V68	Quartermaster furniture	.503
V70	Unaccompanied personnel on-post quarters	.454
V72	Maintenance of BOQ/BEQ, barracks	.460
V74	Privacy in barracks	.414
V76	Physical security for belongings	.468
V78	Furniture in BOQ/BEQ, barracks	.472
V80	Financial planning services on-post	.534
V82	Army Community Services	.504
V84	Child care center hours	.544
V86	Child care center fees	.475

Table 10

(CONTINUED)

V88	Child care center	.535
V90	Services for handicapped dependents	.620
V92	Library (ies)	.474
V94	Physical fitness centers	.509
V96	Department of Defense dependent education	.594
V98	Arts and crafts facilities	.547
V100	Arts and crafts services	.565
V102	Bowling alleys	.520
V104	Outdoor recreation facilities	.558
V106	Club services	.457
V108	Dependent youth activities equipment	.631
V110	Dependent youth activities facilities	.618
V112	Military transportation services	.496
V114	Dependent's transportation to/from military facilities	.499
V116	Commissary services	.549
V118	PX services	.560
V120	Legal services	.515
V122	Banking services	.492
V124	Credit Union services	.446
V126	Postal services	.453
V128	Religious programs	.422
V130	Alcohol abuse services	.506
V132	Drug abuse programs	.545

Table 10

(CONTINUED)

V134	Child abuse services	.553
V136	Equal opportunity	.445
V138	Course tuition assistance	.492
V140	Education center services	.539
V142	Veterans educational assistance program	.466
V144	High school completion program	.577
V146	Basic skills education program	.552
V148	GI Bill	.428
V160	Personnel administration center services	.443
V162	Supply administration center assistance	.472
V164	Military finance services	.457
V166	Civilian KP program	.335
V168	Use of civilians instead of soldiers	.308
V174	Retirement pay	.461
V176	Other retirement benefits	.475
% total item variance accounted for		24.4%

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Table 11

Program Satisfaction Factor Loadings: Enlisted

		Medical Services	Troop Housing	Arts & Crafts	Family Housing	Post Transportation Services	Abuse Programs	Child Care Services	Retirement Benefits
V40	Pay satisfaction	.086	.094	.105	-.035	.124	.091	-.069	.230
V42	Like ability to take dependents overseas free	.117	-.003	.030	-.013	.044	.090	.034	-.020
V44	Reenlistment bonus (enlistment only)	.057	.096	.133	.041	-.020	.252	-.080	.149
V46	Medical facilities	.526	-.012	.037	.008	-.070	.053	-.025	.089
V48	Medical services I receive	.502	.001	.077	-.027	-.020	.089	.014	.062
V50	Dental facilities	.506	-.053	-.003	.033	.112	-.002	.059	-.111
V52	Dental services I receive	.481	-.061	.016	.024	.138	.001	.049	-.144
V54	Dependent's medical services	.472	-.013	.001	.048	-.072	.168	.008	.094
V56	Dependent's dental services	.426	.008	.044	.082	-.017	.026	-.041	.020
V58	CHAMPUS money received for health care	.225	.014	.054	.064	-.004	.098	-.014	.157
V60	Housing Referral office services	-.004	.005	.110	.375	.091	.036	-.004	-.129
V62	Government housing provided	-.019	.105	.176	.466	.049	.131	.031	-.072
V64	Condition of government housing provided	.019	.144	.170	.426	-.011	.099	.046	-.013
V66	Off-post leased housing	.095	.000	.128	.279	.044	.086	.040	-.017
V68	Quartermaster furniture	.038	.167	.074	.131	-.052	.087	-.073	.069
V70	Unaccompanied personnel on-post quarters	-.047	.542	.048	.072	.014	.066	.055	.021
V72	Maintenance of BOQ/BEQ, barracks	-.023	.549	.041	.084	-.007	.020	-.005	.021
V74	Privacy in barracks	-.042	.468	.112	.034	-.056	.073	-.041	.005
V76	Physical security for belongings	-.006	.376	.032	.024	.020	-.006	-.105	-.081
V78	Furniture in BOQ/BEQ, barracks	-.027	.414	-.025	.041	.025	-.015	-.118	.004
V80	Financial planning services on-post	-.048	.080	.012	.062	.086	.013	-.120	-.105
V82	Army Community Services	-.113	-.048	-.019	.070	.212	-.016	-.113	-.132

Table 11 (continued)

Program Satisfaction Factor Loadings: Enlisted

		Medical Services	Troop Housing	Arts & Crafts	Family Housing	Post Transportation Services	Abuse Programs	Child Care Services	Retirement Benefits
V84	Child care center hours	-.097	-.011	.040	.047	.008	.080	-.311	-.049
V86	Child care center fees	-.068	.068	.036	-.059	-.060	.104	-.416	-.019
V88	Child care center	-.086	-.008	.040	.013	.018	.018	.387	-.057
V90	Services for handicapped dependents	.015	.059	-.076	.059	-.021	-.021	-.114	.088
V92	Library(ies)	-.111	-.118	-.218	.020	.260	.260	-.073	-.111
V94	Physical fitness centers	-.070	-.032	-.305	.039	.118	.11[illegible]	-.015	.013
V96	Department of Defense dependent education	-.020	.036	-.116	.004	.096	.096	-.107	-.047
V98	Arts and crafts facilities	.035	-.070	-.508	-.120	-.062	.067	.080	-.061
V100	Arts and crafts services	-.039	-.056	-.500	-.090	.080	.070	-.030	-.051
V102	Bowling alleys	-.110	-.100	-.295	.076	.046	-.025	.008	-.038
V104	Outdoor recreation facilities	-.096	-.095	-.291	.016	-.023	-.050	.087	-.018
V106	Club services	-.079	-.019	-.075	.063	-.191	.006	.019	.026
V108	Dependent youth activities equipment	-.095	-.017	-.254	-.064	-.159	-.004	.101	-.048
V110	Dependent youth activities facilities	-.061	-.056	-.252	-.004	-.180	-.026	.144	-.066
V112	Military transportation services	-.044	-.024	.038	.005	-.527	-.035	-.024	-.035
V114	Dependent transportation to/from military facilities	-.010	-.020	.071	-.009	-.543	.015	-.027	-.009
V116	Commissary services	-.047	-.181	-.014	.001	-.074	.036	-.008	.186
V118	PX services	-.025	-.186	-.048	-.026	-.099	.020	-.067	.183
V120	Legal services	-.058	-.124	.037	-.078	.024	.002	.035	-.083
V122	Banking services	-.015	-.075	.032	-.048	-.088	-.028	-.011	-.031
V124	Credit Union services	-.061	-.058	.035	-.040	-.075	.009	-.067	-.126
V126	Postal services	-.131	-.111	-.025	-.055	.134	-.094	.132	-.086

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Table 11 (continued)

Program Satisfaction Factor Loadings: Enlisted

		Medical Services	Troop Housing	Arts & Crafts	Family Housing	Post Transportation Services	Abuse Programs	Child Care Services	Retirement Benefits
V128	Religious programs	-.103	-.188	-.013	-.041	.151	-.218	.027	-.104
V130	Alcohol abuse services	-.095	-.047	.048	-.064	-.006	-.560	.015	-.046
V132	Drug abuse program	-.103	-.043	.060	-.032	-.019	-.516	.050	.024
V134	Child abuse services	-.048	-.063	.038	-.110	-.021	-.220	.013	-.062
V136	Equal opportunity	-.169	.037	.171	-.072	-.056	-.045	.038	-.073
V138	Course tuition assistance	-.143	-.143	.156	-.297	.089	.089	.089	-.141
V140	Education center services	-.122	-.123	.112	-.292	.068	.082	.134	-.119
V142	Veterans Educational Assistance Program	-.104	-.191	.141	-.224	.030	.069	-.026	.017
V144	High school completion program	-.198	-.116	.122	-.278	.134	-.006	.208	-.131
V146	Basic skills education program	-.125	-.164	.076	-.218	.104	-.012	.244	-.034
V148	GI Bill	-.084	-.115	.082	-.175	.076	.060	.138	.077
V160	Personnel administration center services	-.033	-.010	.138	-.007	.003	.018	.238	.062
V162	Supply administration center assistance	-.048	.040	.146	-.002	-.016	.024	.243	.056
V164	Military Finance Services	-.036	-.007	.156	-.057	.037	.003	.115	.032
V166	Civilian KP program	-.123	-.161	-.024	.101	.036	-.166	.089	.105
V168	Use of civilians instead of soldiers	-.019	-.060	.036	.080	-.006	-.148	.107	.122
V174	Retirement pay	-.012	.035	.094	-.014	.027	.066	.024	.451
V176	Other retirement benefits	.019	-.014	.064	-.046	.018	.001	.049	.490
	% of total item variance accounted for	2.9%	2.6%	2.2%	1.9%	1.7%	1.6%	1.5%	1.5%

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Table 12

Program Satisfaction Factor Loadings: Officers

		Medical Services	Troop Housing	Post Transportation Services	Substance Abuse Programs	Arts and Crafts Facilities	Retirement Benefits	Child Care Services	Dependent Youth Activities
V40	Pay satisfaction	.090	.090	-.030	.093	.030	-.262	.039	.060
V42	Like ability to take dependents overseas free	.080	.040	.055	.092	.083	-.132	.019	.136
V44	Reenlistment bonus (enlistment only	.127	.019	.044	.184	.031	-.087	.036	.122
V46	Medical facilities	.550	-.038	-.137	.007	.022	-.038	.046	.025
V48	Medical services I receive	.540	-.028	-.104	.011	.037	-.016	.016	.005
V50	Dental facilities	.533	-.099	.129	.132	.001	.036	.094	.012
V52	Dental services I receive	.521	-.099	.144	.145	.020	.042	.102	-.016
V54	Dependent's medical services	.523	-.007	-.122	-.015	.073	-.057	-.038	.008
V56	Dependent's dental services	.401	.008	-.006	.055	.087	-.027	.016	.095
V58	CHAMPUS money received for health care	.199	.084	-.035	.059	.111	-.190	-.014	.129
V60	Housing referral house services	-.022	.121	.029	.030	-.028	.035	-.045	.040
V62	Government housing provided	-.007	.386	.025	.076	.020	.013	-.016	.063
V64	Condition of government housing provided	.002	.368	.013	.069	.004	.000	-.040	.048
V66	Off-post leased housing	.011	.130	-.008	.058	.045	-.028	-.003	.093
V68	Quartermaster furniture	-.010	.270	.032	.079	.039	.004	-.097	.068
V70	Unaccompanied personnel on-post quarters	-.079	.566	-.041	.087	.064	.012	.068	.049
V72	Maintenance of BOQ/BEQ, barracks	-.064	.574	-.046	.043	.068	.005	.069	.053
V74	Privacy in barracks	-.023	.426	.014	.039	.094	.017	-.004	-.041
V76	Physical security for belongings	-.041	.314	-.010	.053	.058	.054	.055	-.044
V78	Furniture in BOQ/BEQ, barracks	-.118	.468	.049	.106	.022	.026	.013	-.051

Table 12 (continued)

Program Satisfaction Factor Loadings: Officers

		Medical Services	Troop Housing	Post Transportation Services	Substance Abuse Programs	Arts and Crafts Facilities	Retirement Benefits	Child Care Services	Dependent Youth Activities
V80	Financial planning services on-post	-.060	-.010	.094	-.012	-.047	.091	-.077	.061
V82	Army Community Services	-.120	-.043	.233	.066	-.110	.001	-.087	.081
V84	Child care center hours	-.091	-.064	.066	.097	.022	.027	-.386	.066
V86	Child care center fees	-.098	-.114	.077	.271	.000	.142	-.363	.102
V88	Child care center	-.059	-.090	.087	.140	-.004	.028	-.575	-.006
V90	Services for handicapped dependents	-.024	.003	-.026	.083	-.092	.057	-.222	.070
V92	Library(ies)	-.053	-.101	.095	.087	-.163	.060	-.026	-.082
V94	Physical fitness centers	-.042	-.003	-.017	.056	-.178	.051	.001	-.116
V96	Department of defense dependent education	.029	.029	.078	-.020	-.105	-.011	-.089	.107
V98	Arts and crafts facilities	-.095	-.059	.045	.072	-.668	-.047	.087	-.028
V100	Arts and crafts services	.001	-.062	-.062	-.069	-.646	.198	-.109	-.004
V102	Bowling alley	-.127	-.094	-.010	-.014	-.207	.047	-.023	-.232
V104	Outdoor recreation facilities	-.076	-.065	-.062	.039	-.188	.066	.013	-.342
V106	Club services	-.056	-.022	-.153	-.021	.026	.031	-.019	-.118
V108	Dependent youth activities equipment	-.138	-.063	-.004	.051	-.005	.044	.048	-.391
V110	Dependent youth activities facilities	-.134	-.087	-.122	.006	-.010	.090	.019	-.425
V112	Military transportation services	-.152	-.023	-.417	.001	.055	.208	.007	.153
V114	Dependent's transportation to/from military facilities	-.114	-.017	-.462	-.021	.103	.216	-.051	.210
V116	Commissary services	.032	-.045	-.184	-.013	-.019	.068	-.017	-.082
V118	PX services	.041	-.053	-.155	.004	-.029	.039	.006	-.082

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Table 12 (continued)

Program Satisfaction Factor Loadings: Officers

		Medical Services	Troop Housing	Post Transportation Services	Substance Abuse Programs	Arts and Crafts Facilities	Retirement Benefits	Child Care Services	Dependent Youth Activities
V120	Legal services	-.030	-.066	.043	.008	.019	.070	.030	-.027
V122	Banking services	-.034	-.053	-.026	.003	.057	.122	.023	-.016
V124	Credit Union services	-.058	-.068	.041	.028	.063	.061	-.004	-.051
V126	Postal services	-.059	-.115	.069	-.004	.036	.066	.085	-.070
V128	Religious programs	-.045	-.015	.914	-.117	.024	.104	-.035	.057
V130	Alcohol abuse programs	-.078	-.065	.152	-.681	.000	.008	.050	-.002
V132	Drug abuse program	-.040	-.067	.128	-.680	.006	.024	.074	.012
V134	Child abuse services	-.098	-.132	.032	-.342	.014	.102	-.006	.121
V136	Equal opportunity	-.092	-.116	.052	-.174	.091	.087	.016	.062
V138	Course tuition assistance	-.131	-.182	.196	.052	.156	-.078	.199	.100
V140	Education center services	-.166	-.201	.134	.023	.095	.002	.161	.091
V142	Veterans Educational Assistance Program	-.096	-.151	.041	.046	.134	-.092	.180	.092
V144	High school completion program	-.145	-.186	.226	.007	.181	-.020	.209	.088
V146	Basic Skills Education program	-.149	-.198	.182	-.057	.184	-.011	.167	.069
V148	GI Bill	-.091	-.146	.087	.070	.116	-.161	.164	.040
V160	Personnel administration center services	-.028	-.078	-.066	-.045	.040	.115	.178	.102
V162	Supply administration center assistance	-.066	-.058	-.044	-.054	.071	.145	.170	.109
V164	Military Finance Services	.009	-.091	.039	-.015	.067	.026	.055	.090
V166	Civilian KP program	-.055	-.124	-.061	-.126	.041	.078	.021	.085
V168	Use of civilians instead of soldiers	-.064	-.077	-.114	-.082	.046	.054	.016	.185

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Table 12 (continued)

Program Satisfaction Factor Loadings: Officers

	Medical Services	Troop Housing	Post Transportation Services	Substance Abuse Programs	Arts and Crafts Facilities	Retirement Benefits	Child Care Services	Dependent Youth Activities
V1/4 Retirement pay	-.005	-.028	-.133	.029	.118	-.522	.033	.067
V1/6 Other retirement benefits	.005	-.053	-.191	.022	.109	-.572	.040	.015
% of total item variance accounted for	3.2%	3.1%	2.9%	2.3%	2.1%	1.7%	1.7%	1.5%

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Table 13

Coeffi-ients of Congruence between Satisfaction with

Programs for Enlisted and Officer Samples

Officers	Enlisted Medical Services	Troop Housing	Post Transportation Services	Substance Abuse Programs	Arts & Crafts Facilities	Retirement Benefits	Child Care Services	Family Housing
Medical Services	.962	-.022	.086	.217	.093	.163	.047	.173
Troop Housing	.082	.891	-.051	.211	.155	.072	-.170	.455
Post Trans Services	-.166	-.152	.673	-.242	.087	-.423	.005	-.169
Substance Abuse Programs	.211	.199	.083	.873	-.043	.027	-.278	.154
Arts & Crafts Facilities	.069	.113	-.170	.008	.830	.101	.176	-.070
Retirement Benefits	-.157	-.005	-.261	-.213	-.206	-.724	-.056	.079
Child Care Services	.002	-.094	.117	-.107	-.128	.034	-.824	-.342
Dependent Youth Activities	.138	.030	-.014	.099	.043	.136	-.099	.007

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Multiple regressions were performed regressing each item measuring career intentions against the other two items. The squared multiple correlations of each variable with the other two variables were then entered on the main diagonal of the correlation matrix. Separate principal components factor analyses for officer and enlisted samples were then performed. These analyses revealed that the items comprised one valid factor in each sample, making rotation unnecessary. Item loadings and percentage of total item variance accounted for by career intention variables for officer and enlisted samples are reported in Table 14. The coefficient of congruence for the career intention factors in these two samples is .999.

In order to determine the relationship of military attitudes (commitment), duty environment, general program satisfaction and specific program satisfaction with career intentions, scale scores were constructed for each of the above variables. For the four commitment factors, duty environment factor and general program satisfaction factor exact method factor scores were computed for each respondent. That is, for each item on these scales, its factor score coefficient was multipled by its standard (z) score. This product was summed for all items on the particular scale. Missing items were replaced by the mean score, unless the proportion of missing scores for a respondent was over a certain level (never more than half) in which case respondent's score on that factor was declared missing. Due to the way the original responses were scored, the more positively soldiers responded to these items, the higher the resulting factor score.

For the eight program satisfaction factors a different method of computing the scale score was used. Here, for each of the items best defining a factor (underlined items in Tables 11 and 12) the raw score on that item was added to other item scores. Again, missing item scores were replaced by the mean for a respondent unless the proportion of missing data was too great. Then that respondent's score on that factor (scale) was recorded as missing.

The reason why a different method was used to calculate scale scores for satisfaction with specific programs is as follows: The scales constructed by the exact method (four commitment scales, duty environment, general program satisfaction and career intention scales) seem to measure concepts. Thus it is appropriate for each item, and not just those items loading highly on the dimension, to contribute to its score. However, when measuring satisfaction with specific programs, one is measuring entities. Thus, it makes no sense, for example, for satisfaction with retirement pay to be included in the scale measuring satisfaction with medical programs. Thus for these scales, only items dealing with the relevant programs were included in computing the scale score, as described above.

Table 14

Career Intentions Factor Loadings

Officers

V16	Present career intentions	.763
V17	Opportunity to leave Army	.779
V18	Most important reason you'd leave Army	.671
% of total item variance accounted for		54.6%

Enlisted

V16	Present career intentions	.724
V17	Opportunity to leave Army	.757
V18	Most important reason you'd leave Army	.646
% of total item variance accounted for		50.5%

APPENDIX C

RESEARCH METHODOLOGICAL AND STATISTICAL ISSUES

Research Methodological and Statistical Issues

Beyond yielding interesting findings in its own right, this research effort can be seen as a pilot to future investigations of the relative importance of organizational attitudes and human resource management programs in military career intention. This project offers suggestions on experimental methodology and statistical concerns for future work.

Research Methodology Implications

The analysis and interpretation of the quality of life data suggest that several revisions of research methodology would aid future efforts on the topic. Recommendations can be classified into those dealing with the sampling technique and those which pertain to the survey instrument.

Sampling Considerations

If future investigations are performed at the Army-wide level of analysis the number of subjects could be greatly reduced. Assuming that the analyses would be multivariate in nature, include 178 questions and treat the data separately for officers and enlisted, figures of 1780 officers and 1780 enlisted (i.e., 10 subjects per variable) would probably be adequate. These subjects should be randomly chosen with no weighting on sampling parameters.

Should future efforts be designed to determine possible differential impacts of entitlements/services on various segments of the military population with which the Army is particularly concerned, then these segments of the population should be more intensively sampled to permit specific analyses of their responses. Thus, if the army were particularly interested in the retention of combat arms NCO's E5 or higher, a random sample of 1780 of them could be selected for the target group specific regression analyses. These data may also be used in the total Army sample if their responses are weighted downward by a factor based on the actual percentage of total respondents in the enlisted force who are in this category.

Employing a methodology of selecting more intensively from certain segments of the Army population obviously requires a decision before surveying as to which segments will be considered individually.

Survey Instrument Issues

A content review of the questionnaire coupled with knowledge of the statistical results of the survey suggests several ways in which this instrument can be improved should it be used in future work. Following some general comments, these observations are offered in the order that the items appear on the survey (see Appendix A).

Response alternatives should be indicated by numbers rather than letters to decrease the risk of key-punching errors. It is also important that the response alternatives fall on an equal-interval scale to allow sensitive statistical analyses. So too, on items where subjects are able to give a precise numerical answer (e.g., items 3, 4, 5, etc.) this answer should be sought rather than a categorical response so that valuable information will not be lost.

Since officers will also be using this form, response E to item 2 should read "bachelor's degree" and response F should read "masters degree or higher." Item 6 should define the term "dependent" as it pertains to eligibility for Army benefits. Item 8 responses might accommodate voluntary (not legal) separation as well as involuntary separation such as health reasons, hardship tour, etc. Item 10 should probably distinguish "Hispanics" as a separate ethnic group since they constitute a sizeable, identifiable minority group in the Army. Item 11 should ask the more precise nature of the unit rather than using the very general categories of combat, combat support, and combat service support. Somewhere prior to item 11 it would be helpful to ask the respondents about the primary military occupational specialty held. Finally, in section A a sixth alternative response should be offered at item 16 dealing with intentions to not complete obligated tour of service since it might aid in understanding the role of benefits, human resource management programs, and military attitudes in attrition. Other items in this section might include SQT scores, EER's, disciplinary incidents, etc.

It would probably be helpful to replace the ad hoc items of section B with some of the short standardized validated scales of military motivation and morale.

The list of benefits and services in section C should be reviewed to assure that particular ones are not oversampled or undersampled, thus biasing the factor structure. One might evaluate which benefits/services to include from the vantage point of whether soldier-consumers see these as independent possible benefits and services or else scrutinize the items in terms of those the Army sets up as distinct, independent entities. The items in this section of the survey should be randomized so that the factor structure will be solely based on similar perceptions of respondents rather than on the physical placement of items on the questionnaire. Most importantly response option A for satisfaction and importance should be deleted since it is not on the conceptual dimension of importance or satisfaction. One might offer neutral alternatives such as "neither important nor unimportant" and "neither satisifed nor dissatisfied." The advantage of the neutral point in increasing the number of response categories might well be offset by the disadvantage of increasing central tendency response bias. Section C might also include a third judgment dimension dealing with amount of self-reported use of program/entitlement. Subjects should be instructed to rate only programs which exist at their post or installation.

Lastly, if the open-ended items of section D are to appear in future surveys they should be asked before questions in section C if the responses of these items are designed to tap spontaneous, "gut-level," reactions. Responses to these questions must be scaled in order to permit quantitative analysis. One technique for doing this is provided by Allen and Sheahun (in press).

Statistical Issues

Data from this project were analyzed using stepwise multiple regression techniques. In that multiple regression is an extension of the simple Pearson product moment correlation, it assumes similar characteristics of the data but extends these assumptions to the case of a series of predictor variables rather than a single one. Hence, multiple regression assumes: that subjects

on the underlying distribution of all possible single predictor variables and combinations of predictor variables and the criterion variable are normally distributed; that all possible combinations of predictors are linearly related to the criterion; and that the levels of single and compound predictors exhibit homogeneity of variance. Unfortunately as Bock (1976) notes "at the present time there is no practical method available for testing multivariate normality" and indeed the same thing might be said for the multilinearity and multiple regression homogeneity of variance assumptions as well.

Nevertheless, it is possible to assess the extent to which the necessary, but not sufficient, requirements of the multivariate assumptions are met. Prior to assessing the assumptions of simple variable relationships, all variables were collapsed into score categories of one-half standard deviations from z = -3.00 to z = 3.00 with scores lower or higher than 3 standard deviations from the mean being categorized as -3.00 or +3.00 as appropriate.

Normality of Distributions

Frequency distributions on all possible predictors as well as the criterion were evaluated for normality by means of separate chi-squares. For the chi-squares, hypothetical frequencies of cells were determined from a table of percentiles of the standardized normal distribution. All variables were found to differ from normality at p .05 and, in fact, all yielded chi-squares significant at p .001, with the exception that the chi-square for enlisted medical services was at p .05 and enlisted pride in the Army was at p .01.

Despite the fact that the variables were not normally distributed, the likely effect of this violation of assumption was probably not serious since the strength of the regression equation is determined by F based on more than one variable and is thus subject to the Central Limit Theorem. One would, however, be able to probably make the simple variable distributions more normal by increasing the number of items or scales or increasing the number of response alternatives to the questions. (An examination of the actual shapes of the frequency distributions did not suggest any overall solution to the normality problem in terms of a consistent re-scaling of the scores given to various response alternatives.)

Linearity of Predictor-Criterion Relationships

The linearity of the relationships of simple predictors to the criterion was measured by computing F's contrasting the residual curvilinear relationship with the purely linear relationship of each predictor with the criterion. Levels of the predictor were the categories noted above but the criterion was treated in its continuous, "raw" form (i.e., without collapsing). F-tests for the curvilinearity of predictor-criterion relationships are reported at Tables 15 and 16 for enlisted and officers respectively.

As will be noted from Tables 15 and 16, seven of the curvilinear relationships were statistically significant at one .05 level beyond their linear relationships. In all cases the F for the linear relationship was also significant and was much larger than the F for the residual curvilinear

Table 15

Deviations from Linearity

of Single Predictors

with Career Intentions: Enlisted

Variable	F	D.F.	Sig
Pride in the Army	.973	10,2212	.4648
Supervisory support	.788	10,2212	.6406
Personal job involvement	.712	7,2215	.6618
Self-sacrifice for mission	1.812	10,2212	.0536
Duty environment	.895	7,1706	.5095
General program satisfaction	.768	10,1915	.6595
Medical services	1.067	6,2105	.3796
Troop housing	1.048	7,1564	.3953
Arts and crafts	2.815	5,1680	.0154
Family housing	1.621	6,1320	.1376
Post transportation	.650	5,1878	.6616
Substance abuse program	.355	5,998	.8789
Child care	1.319	4,652	.2612
Retirement benefits	1.327	5,1620	.2497

Note: F = SS/BG (i.e., due to curvilinearity alone) divided by SS/WG (i.e., due to linearity alone).

Table 16

Deviations from linearity

of Single Predictors

with Career Intentions: Officers

Variable	F	D.F.	Sig
Pride in the Army	4.949	9,4232	.0000
Supervisory support	8.756	9,4232	.0000
Personal job involvement	24.979	7,4234	.0000
Self-sacrifice for mission	15.201	9,4232	.0000
Duty environment	.524	8,2880	.8395
General program satisfaction	2.064	9,3497	.0293
Medical services	.654	7,4095	.7113
Troop housing	2.324	6,2280	.0306
Post Transportation	.849	8,2749	.5595
Substance Abuse	1.484	5,1948	.1918
Arts & Crafts	1.147	5,3355	.3334
Retirement Benefits	.390	5,3170	.8557
Child care	1.676	6,3531	.1225
Dependent youth activities	.810	5,2132	.5422

Note: F = SS/BG (i.e., due to curvilinearity alone) divided by SS/WG (i.e., due to linearity alone).

relationship. In the interest of parsimony and ease of understanding, it is believed that little would likely be gained by either employing a factorial analysis of variance design instead of the multiple regression model or rescaling of response alternatives to handle the unique curvilinearity of these relationships. (It is nonetheless interesting that the officer organizational attitude variables had very significant unique curvilinear relationships with career intentions even beyond their linear associations since these factors play the dominant role in the regression equation. Hence the total relationship of organizational attitude to officer career intention is even stronger than the regression analysis has indicated.)

Homogeneity of Variance for Prediction Variables

Hartley's F-maximum test was selected to assess homogeneity of variance. It was decided to consider only those levels of predictor variables which contained more than 10 subjects so that the statistical test would be based on stable variances. Tables 17 and 18 report the calculated F's (i.e., largest variance for a predictor level divided by the smallest variance for a predictor level) and the number of levels with 10 or more subjects in them. Tables of critical values go only to 60 degrees of freedom in the largest variance group. At this level and with eleven variances being contrasted the critical value of F max is 2.7 at alpha = .01. From the calculated F's probably only one variable (pride in the Army among the officer subjects) can be shown to be unacceptably heterogeneous. Variances of this item by response level are as follows:

Level	Variance
-2.5	.435
-2.0	.401
-1.5	.484
-1.0	.501
- .5	.563
.5	.541
1.0	.466
1.5	.404
2.0	.154 (N = 215 Ss)
2.5	.099 (N = 11)

In that the variances increase as the response level moves farther from the mean z-score of 0, it would appear that a transformation of scores as 1 divided by the logarithm of the score would solve the problem.

Table 17

Homogeneity of Variance of Single Predictor

Variables with Career Intentions: Enlisted

Variable	F_{calc}	N of Levels with 10+Ss
Pride in the Army	1.64	10
Supervisory support	1.51	10
Personal job involvement	1.32	8
Self-sacrifice for mission	1.84	11
Duty environment	1.20	9
General program satisfaction	1.61	11
Medical services	1.21	8
Troop housing	1.21	7
Arts and crafts	1.28	7
Family housing	1.45	8
Post transportation	1.40	7
Substance abuse programs	1.16	7
Child care	1.77	6
Retirement benefits	1.25	7

Table 18

Homogeneity of Variance of Single Predictor

Variables with Career Intentions: Officers

Variable	F_{calc}	N of Levels with 10+Ss
Pride in the Army	5.69	10
Supervisory support	1.69	11
Personal job involvement	1.35	8
Self-sacrifice for mission	1.47	11
Duty environment	1.39	10
General program satisfaction	1.74	11
Medical services	1.21	9
Troop housing	1.36	8
Post Transportation	1.17	10
Substance Abuse	1.26	7
Arts & Crafts	1.20	7
Retirement Benefits	1.14	7
Child care	1.35	8
Dependent youth activities	1.28	7